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Modeling the DVCS Cross Section with Deep Learning BRANDON KRIESTEN, JAKE GRIGSBY, JOSHUA HOSKINS, SIMONETTA LIUTI, PETER ALONZI, Univ of Virginia — Imaging the 3D partonic structure of the nucleon is a fundamental goal of every major nuclear experimental program, such as the electron ion collider (EIC). Ji first proposed deeply virtual Compton scattering (DVCS) as a probe for imaging the spatial distribution of the partons by fourier transform of the exchanged momentum transfer between the initial and final proton. The extraction of observables from deeply virtual exclusive reactions in a clear and concise formalism was a necessity. We recently presented a completely covariant description of the DVCS process. In our helicity formalism, we extract the Compton form factors H and E separately using a generalization of the Rosenbluth method such that the dependence on Q2 is clear. In addition, using state of the art neural network techniques, we perform an analysis of the DVCS cross section and show initial steps toward a global neural network extraction of Compton form factors.

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